

**19-1 INTRODUCTION**

This chapter analyzes the Tappan Zee Hudson River Crossing Project's potential effects on minority, and low-income, populations, to determine whether the project would result in disproportionately high and adverse impacts on those populations. The analysis of potential environmental justice impacts of the Tappan Zee Hudson River Crossing Project is based on the impact assessments included in the other chapters of this Environmental Impact Statement (EIS), and takes into account mitigation measures and any offsetting benefits to the affected populations. This chapter accounts for changes in the project between the Draft and Final EIS including: (1) elimination of residential or business displacements; and (2) toll adjustments analysis. In summary, the project would not result in any disproportionately high and adverse effects on minority and low-income populations. Therefore, no environmental justice impacts are anticipated.

**19-2 REGULATORY CONTEXT**

To satisfy Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), this analysis has been prepared to identify and address any disproportionately high and adverse impacts on minority or low-income populations that could result from the project. Executive Order 12898 also requires federal agencies to work to ensure greater public participation in the decision-making process. This environmental justice analysis will also serve to assist the New York State Department of Environmental Conservation (NYSDEC) in its environmental permit review process associated with the proposed permit actions and its application of the State Environmental Quality Review Act (SEQRA), and is consistent with the intent of CP-29, "Environmental Justice and Permitting," which is the NYSDEC's policy on environmental justice.

The environmental justice analysis for the project follows the guidance and methodologies recommended by the federal Council on Environmental Quality (CEQ) in *Environmental Justice Guidance under the National Environmental Policy Act* (December 1997), the U.S. Department of Transportation (USDOT) in its Updated Environmental Justice Order 5610.2(a) (Actions to Address Environmental Justice in Minority Populations and Low-Income Populations)<sup>1</sup>, and the Federal Highway Administration (FHWA) in FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (Order 6640.23a dated June 14, 2012)<sup>2</sup>.

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<sup>1</sup>This Order updates USDOT's original Environmental Justice Order, which was published April 15, 1997.

<sup>2</sup>The Federal Highway Administration issued Order 6640.23A in June 2012, which cancels its Order 6640.23 dated October 1998.

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These orders establish policies and procedures for the agencies to use in complying with Executive Order 12898. The Executive, USDOT, and FHWA orders on environmental justice reaffirm the principles of Title VI of the Civil Rights Act of 1964 (Title VI) and the National Environmental Policy Act (NEPA), emphasizing the importance of those provisions in the environmental and transportation-related decision-making process. On December 16, 2011, FHWA issued supplemental guidance on environmental justice and NEPA, which was also consulted in preparing this environmental justice analysis. In addition, FHWA's guidance on environmental justice issues related to road pricing projects was reviewed in *Environmental Justice Emerging Trends and Best Practices Guidebook* (November 2011). In addition, to better address Limited English Proficient (LEP) populations, "Implementing the Department of Transportation's Policy Guidance Concerning Recipients' Responsibilities to Limited English Proficient (LEP) Persons: A Handbook for Public Transportation Providers" (April, 2007), issued by the Federal Transit Administration (FTA), was utilized to address certain concerns regarding public transit ridership and LEP populations.

### **19-3 METHODOLOGY**

The assessment of environmental justice for the project was based on the CEQ, USDOT, FTA, and FHWA documents identified above. It involved five basic steps:

1. Identify the areas where the project may cause adverse impacts either during construction or operation (i.e., the study areas);
2. Compile minority and low-income data for the census block groups within the study areas and identify minority and low-income populations;
3. Identify the project's potential adverse impacts on minority and low-income populations; and
4. Evaluate the project's potential adverse effects on minority and low-income populations relative to its overall effects to determine whether any potential adverse impacts on those communities would be significant and disproportionately high.
5. Discuss mitigation measures for any identified disproportionate adverse impacts.
6. Describes the public outreach and participation process for effectively engaging minority and low-income populations in the decision-making process.

#### **19-3-1 DELINEATION OF STUDY AREA**

For this project, three different study areas for environmental justice were established— 1) operational study area; 2) construction study area; and 3) toll adjustment study area. For all three study areas, census block groups were chosen as the geographic unit for analysis so as not to artificially dilute or inflate the affected populations, consistent with the federal guidance on environmental justice. Block group boundaries were based on the 2010 Census.<sup>3</sup>

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<sup>3</sup> Between publication of the Draft and Final EIS, the 2006-2010 American Community Survey (ACS) was released from the U.S. Census Bureau, which serves to update the 2005-2009 ACS data that was previously included in the DEIS to identify low-income communities. The latest ACS data relies on 2010 Census geographies.

19-3-1-1 OPERATIONAL STUDY AREA

The operational study area for environmental justice encompasses the area most likely to be affected by the project and accounts for the potential impacts resulting from operation (see **Figure 19-1**), other than potential toll adjustment effects. The operational study area for environmental justice generally approximates the socioeconomic study area (see Chapter 8, “Socioeconomic Conditions”). The operational study area generally includes the census block groups that overlap with the ½-mile perimeter around the project site.

The environmental justice study area for operational impacts spans a portion of the Hudson River in the area of the Tappan Zee Bridge and extends into Westchester County on the east and Rockland County on the west. The study area includes the replacement bridge and proposed landing locations.

19-3-1-2 CONSTRUCTION STUDY AREA

The study area for construction effects includes the area where construction would take place along the Interstate 87/287 right-of-way (see **Figure 19-2**). In addition, the study area includes three potential construction staging areas outside the NYSTA right-of-way: the Tilcon Quarry Inland Staging Area and the West Nyack Inland Staging Area in Rockland County on the west side of the Hudson River and the Tarrytown Inland Staging Area in Westchester County on the east side of the Hudson River.

19-3-1-3 TOLL ADJUSTMENTS STUDY AREA

Lastly, a study area for the environmental justice analysis of potential toll adjustments was selected. For this project, the primary issue is whether adverse effects of potential toll adjustments on low-income populations would be disproportionately high compared to the general population. Potential toll adjustments would be expected to primarily affect commuters who cross the Tappan Zee Bridge for work. Based on Census Transportation Planning Package’s (CTPP) 2006-2008 3-year ACS data (i.e., journey-to-work data), and data available from the New York State Thruway Authority (NYSTA) for individual E-ZPass tag customers, the “commuter shed,” or the area where the vast majority of these commuters originate, was determined to be Rockland, Orange, and Westchester Counties (see **Figure 19-3**). (Because E-ZPass users compose a relatively large proportion of total Tappan Zee Bridge users [approximately 75 percent], it was assumed that the origin of Tappan Zee Bridge commuters with E-ZPass is similar to the origin of all Tappan Zee Bridge commuters). Thus, the study area for the analysis of the project’s potential environmental justice effects related to potential toll adjustments consists of the counties that make up the commuter shed.

19-3-2 **IDENTIFICATION OF ENVIRONMENTAL JUSTICE POPULATIONS**

To identify minority and low-income populations in the study areas, data was gathered from the U.S. Census Bureau’s *Census 2010* and *2006–2010* American Community Survey (ACS), respectively, for all census block groups within the study areas.<sup>1</sup> For comparison purposes, data were aggregated for the study areas as a whole, and compiled for Rockland and Westchester Counties since the study areas include portions of both. Minority and low-income populations were identified as follows:

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- Minority Populations. FHWA Order 6640.23a defines minority persons as: “(1) Black: a person having origins in any of the black racial groups of Africa; (2) Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race; (3) Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia or the Indian subcontinent; (4) American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or (5) Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa or other Pacific Islands.” This environmental justice analysis also considers minority populations to include persons who identified themselves as being either “some other race” or “two or more races” in the *Census 2010*. Following CEQ guidance, minority populations were identified where either: (1) the minority population of the affected area exceeds 50 percent; or (2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. For this analysis, Rockland County was used as the project’s primary statistical reference area for the census block groups located in Rockland County. In Rockland County, the minority population in 2010 was 34.7 percent. Westchester County was used as the reference area for the study area’s census block groups located in Westchester County. In Westchester County, the minority population in 2010 was 42.6 percent. In Orange County—the reference area for the block groups in the toll adjustments study area that are in Orange County—the minority population in 2010 was 31.8 percent. For this environmental justice analysis, census block groups having total minority populations greater than in the respective county reference areas were identified as minority areas.
- Low-Income Populations. FHWA Order 6640.23a defines a low-income person as “a person whose median household income is at or below the Department of Health and Human Services poverty guidelines.” The percent of individuals below poverty level in each census block group (based on the 2000 Census), available in the U.S. Census Bureau’s 2006–2010 ACS, was used to identify low-income populations. This analysis considers any census block group with a percentage of individuals below poverty level that is greater than its respective reference area (i.e., Rockland, Westchester, or Orange County) to be low-income. In Rockland and Orange Counties, approximately 11.3 and 11.1 percent of individuals live below the federal poverty threshold, respectively; therefore, any census block group located in Rockland or Orange County with more than 11.3 and 11.1 percent of its individuals living below the poverty level, respectively, is considered to be low-income area. Similarly, any census block group in Westchester County having a low-income population greater than the percentage of individuals living below poverty in Westchester County (8.2 percent) is considered to be a low-income area.<sup>4</sup>

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<sup>4</sup> The low-income population percentages are presented to the tenth decimal place in the Final EIS rather than as a whole number as was presented in the Draft EIS, to more accurately identify potential low-income communities in the toll adjustments study area, which was added to the analysis since publication of the Draft EIS.

**19-4 AFFECTED ENVIRONMENT**

**19-4-1 MINORITY STATUS ANALYSIS**

19-4-1-1 OPERATIONAL STUDY AREA

Of the study area’s 11 census block groups, four (4) are considered minority areas or communities of concern for environmental justice (see **Figure 19-1** and **Table 19-1**). The identified minority populations include two in Rockland County (Tract 132 Block Groups 2 and 3) and two in Westchester County (Tract 114 BG 3 and Tract 115 BG 2). These communities have minority population percentages ranging from 44.1 to 50.0 percent. While these percentages are at or below CEQ’s 50 percent threshold for identifying minority populations, they are considered meaningfully greater than in their respective references areas (34.7 percent in Rockland County and 42.6 percent in Westchester County). Of the minority populations in the study area, the Hispanic population accounts for the greatest proportion of the total population in the study area (13.3 percent), followed by Black or African American populations (9.3 percent) and by Asian populations (7.8 percent) and “Other” minority populations (2.5 percent).

**Table 19-1  
Operational Study Area Race and Ethnicity**

Census Block Groups	2010 Census											Total Minority (%)
	2010 Total	Race and Ethnicity*										
		White	%	Black	%	Asian	%	Other	%	Hispanic	%	
<b>Westchester County Block Groups</b>												
Tract 114, BG 1	1,331	1032	77.5	11	0.8	166	12.5	48	3.6	74	5.6	22.5
Tract 114, BG 2	2,004	1,333	66.5	192	9.6	209	10.4	27	1.3	243	12.1	33.5
<b>Tract 114, BG 3</b>	<b>575</b>	<b>291</b>	<b>50.6</b>	<b>69</b>	<b>12.0</b>	<b>103</b>	<b>17.9</b>	<b>19</b>	<b>3.3</b>	<b>93</b>	<b>16.2</b>	<b>49.4</b>
Tract 114, BG 4	1,808	1217	67.3	129	7.1	215	11.9	54	3.0	193	10.7	32.7
Tract 114, BG 5	650	567	87.2	11	1.7	21	3.2	3	0.5	48	7.4	12.8
<b>Tract 115, BG 2</b>	<b>1,478</b>	<b>783</b>	<b>53.0</b>	<b>135</b>	<b>9.1</b>	<b>53</b>	<b>3.6</b>	<b>27</b>	<b>1.8</b>	<b>480</b>	<b>32.5</b>	<b>47.0</b>
Tract 115, BG 3	862	617	71.6	44	5.1	36	4.2	25	2.9	140	16.2	28.4
<b>Rockland County Block Groups</b>												
Tract 130.03, BG 2	912	774	84.9	54	5.9	37	4.1	9	1.0	38	4.2	15.1
Tract 132, BG 1	1,014	874	86.2	45	4.4	42	4.1	19	1.9	34	3.4	13.8
<b>Tract 132, BG 2</b>	<b>1,333</b>	<b>745</b>	<b>55.9</b>	<b>209</b>	<b>15.7</b>	<b>123</b>	<b>9.2</b>	<b>64</b>	<b>4.8</b>	<b>192</b>	<b>14.4</b>	<b>44.1</b>
<b>Tract 132, BG 3</b>	<b>1,163</b>	<b>581</b>	<b>50.0</b>	<b>322</b>	<b>27.7</b>	<b>25</b>	<b>2.1</b>	<b>29</b>	<b>2.5</b>	<b>206</b>	<b>17.7</b>	<b>50.0</b>
<b>Total Study Area</b>	<b>13,130</b>	<b>8,814</b>	<b>67.1</b>	<b>1,221</b>	<b>9.3</b>	<b>1,030</b>	<b>7.8</b>	<b>324</b>	<b>2.5</b>	<b>1,741</b>	<b>13.3</b>	<b>32.9</b>
<b>Westchester County</b>	<b>949,113</b>	<b>544,563</b>	<b>57.4</b>	<b>126,585</b>	<b>13.3</b>	<b>51,123</b>	<b>5.4</b>	<b>19,810</b>	<b>2.1</b>	<b>207,032</b>	<b>21.8</b>	<b>42.6</b>
<b>Rockland County</b>	<b>311,687</b>	<b>203,670</b>	<b>65.3</b>	<b>34,623</b>	<b>11.1</b>	<b>19,099</b>	<b>6.1</b>	<b>5,512</b>	<b>1.8</b>	<b>48,783</b>	<b>15.7</b>	<b>34.7</b>
<b>Notes:</b>												
<b>Bold italic</b> denotes environmental justice area.												
* The racial and ethnic categories provided are further defined as: White (White alone, not Hispanic or Latino); Black (Black or African American alone, not Hispanic or Latino); Asian (Asian alone, not Hispanic or Latino); Other (American Indian and Alaska Native alone, not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone, not Hispanic or Latino; Some other race alone, not Hispanic or Latino; Two or more races, not Hispanic or Latino); Hispanic (Hispanic or Latino; Persons of Hispanic origin may be of any race).												
<b>Sources:</b> U.S. Census Bureau, <i>Census 2010</i> .												

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19-4-1-2 CONSTRUCTION STUDY AREA

As shown on **Figure 19-2** and in **Table 19-2**, there are minority areas, as well as non-minority areas, located within the construction study area. Of the construction study area's 16 2010 Census block groups, 6 are considered minority areas and the remaining 10 block groups are considered non-minority areas.

**Table 19-2  
Construction Study Area Race and Ethnicity**

Census Block Groups	2010 Total	2010 Census Race and Ethnicity*										Total Minority (%)
		White	%	Black	%	Asian	%	Other	%	Hispanic	%	
<b>Westchester County Block Groups</b>												
Tract 114, BG 1***	1,331	1032	77.5	11	0.8	166	12.5	48	3.6	74	5.6	22.5
Tract 114, BG 2***	2,004	1,333	66.5	192	9.6	209	10.4	27	1.3	243	12.1	33.5
<b>Tract 114, BG 3***</b>	<b>575</b>	<b>291</b>	<b>50.6</b>	<b>69</b>	<b>12.0</b>	<b>103</b>	<b>17.9</b>	<b>19</b>	<b>3.3</b>	<b>93</b>	<b>16.2</b>	<b>49.4</b>
Tract 114, BG 4***	1,808	1217	67.3	129	7.1	215	11.9	54	3.0	193	10.7	32.7
Tract 114, BG 5***	650	567	87.2	11	1.7	21	3.2	3	0.5	48	7.4	12.8
<b>Tract 115, BG 2***</b>	<b>1,478</b>	<b>783</b>	<b>53.0</b>	<b>135</b>	<b>9.1</b>	<b>53</b>	<b>3.6</b>	<b>27</b>	<b>1.8</b>	<b>480</b>	<b>32.5</b>	<b>47.0</b>
Tract 115, BG 3***	862	617	71.6	44	5.1	36	4.2	25	2.9	140	16.2	28.4
<b>Rockland County Block Groups</b>												
Tract 111.02 BG 1	1,844	1350	73.2	109	5.9	188	10.2	35	1.9	162	8.8	26.8
Tract 111.02 BG 2	2,103	1380	65.6	396	18.8	120	5.7	35	1.7	172	8.2	34.4
<b>Tract 111.02 BG 3</b>	<b>1,948</b>	<b>658</b>	<b>33.8</b>	<b>639</b>	<b>32.8</b>	<b>182</b>	<b>9.3</b>	<b>68</b>	<b>3.5</b>	<b>401</b>	<b>20.6</b>	<b>66.2</b>
Tract 112 BG 2	1,281	902	70.4	30	2.3	171	13.3	11	0.9	167	13.0	29.6
Tract 130.03, BG 2***	912	774	84.9	54	5.9	37	4.1	9	1.0	38	4.2	15.1
<b>Tract 131 BG 1**</b>	<b>1,331</b>	<b>669</b>	<b>50.3</b>	<b>295</b>	<b>22.2</b>	<b>86</b>	<b>6.5</b>	<b>33</b>	<b>2.5</b>	<b>248</b>	<b>18.6</b>	<b>49.7</b>
Tract 132, BG 1***	1,014	874	86.2	45	4.4	42	4.1	19	1.9	34	3.4	13.8
<b>Tract 132, BG 2***</b>	<b>1,333</b>	<b>745</b>	<b>55.9</b>	<b>209</b>	<b>15.7</b>	<b>123</b>	<b>9.2</b>	<b>64</b>	<b>4.8</b>	<b>192</b>	<b>14.4</b>	<b>44.1</b>
<b>Tract 132, BG 3***</b>	<b>1,163</b>	<b>581</b>	<b>50.0</b>	<b>322</b>	<b>27.7</b>	<b>25</b>	<b>2.1</b>	<b>29</b>	<b>2.5</b>	<b>206</b>	<b>17.7</b>	<b>50.0</b>
<b>Total Study Area</b>	<b>21,637</b>	<b>13,773</b>	<b>63.7</b>	<b>2,690</b>	<b>12.4</b>	<b>1,777</b>	<b>8.2</b>	<b>506</b>	<b>2.3</b>	<b>2,891</b>	<b>13.4</b>	<b>36.3</b>
<b>Westchester County</b>	<b>949,113</b>	<b>544,563</b>	<b>57.4</b>	<b>126,585</b>	<b>13.3</b>	<b>51,123</b>	<b>5.4</b>	<b>19,810</b>	<b>2.1</b>	<b>207,032</b>	<b>21.8</b>	<b>42.6</b>
<b>Rockland County</b>	<b>311,687</b>	<b>203,670</b>	<b>65.3</b>	<b>34,623</b>	<b>11.1</b>	<b>19,099</b>	<b>6.1</b>	<b>5,512</b>	<b>1.8</b>	<b>48,783</b>	<b>15.7</b>	<b>34.7</b>
<b>Notes:</b>												
<b>Bold italic</b> denotes environmental justice area.												
* The racial and ethnic categories provided are further defined as: White (White alone, not Hispanic or Latino); Black (Black or African American alone, not Hispanic or Latino); Asian (Asian alone, not Hispanic or Latino); Other (American Indian and Alaska Native alone, not Hispanic or Latino; Native Hawaiian and Other Pacific Islander alone, not Hispanic or Latino; Some other race alone, not Hispanic or Latino; Two or more races, not Hispanic or Latino); Hispanic (Hispanic or Latino; Persons of Hispanic origin may be of any race).												
**Tract 131, BG 1 as defined by the 2010 Census covers the same land area as Tract 131, Block Groups 4 and 5 as identified in the 2000 Census (see <b>Table 19-4</b> , below)												
***These block groups are also in the operational study area.												
<b>Sources:</b> U.S. Census Bureau, <i>Census 2010</i> .												

Both minority and non-minority areas are located along the right-of-way. There is no alternative to construction of the Tappan Zee Hudson River crossing taking place within the Interstate 87/287 right-of-way. Outside of the right-of-way, two of the potential construction staging areas (the West Nyack Inland Staging Area in Rockland County and the Tarrytown Inland Staging Area in Westchester County) are located in minority areas as identified according to the applicable federal guidance on environmental justice, and one of the potential staging areas—the Tilcon Quarry Inland Staging Area in Rockland County—is located in a non-minority and non-low-income area. Of the two staging areas located in minority areas, the one in West Nyack, Town of Clarkstown, is composed of vacant land or commercial and industrial uses, including auto-related

uses, storage and manufacturing, a fast food establishment, and a waste disposal facility, and does not contain any residents.<sup>5</sup> The Tarrytown Inland Staging Area, which is also located in a minority area, is owned by the New York State Thruway Authority (NYSTA).

#### 19-4-1-3 TOLL ADJUSTMENTS STUDY AREA

As discussed above, the primary issue regarding the potential environmental justice effects of potential toll adjustments is whether adverse effects would be disproportionately high for low-income populations compared to the general population. Minority populations in the study area that are not low-income would not be disproportionately affected by adverse toll adjustments effects, since the financial burden of toll adjustments would equally affect both minority and non-minority communities, assuming neither is low-income. FHWA's guidance on environmental justice related to road pricing projects was reviewed for other issues related to toll adjustments that could result in disproportionately high adverse effects. Such issues include whether a project would result in diverting through minority and/or low-income communities; whether a project would cause adverse impacts on transit users, which generally include minority and low-income residents; and whether all affected populations, including minority populations, had the opportunity to participate in the planning and decision-making process.

The project would not have disproportionately high and adverse effects on minority populations from the potential toll adjustments. For instance, the *Diversion Analysis for Potential Tolling on the Tappan Zee Bridge* (see **Appendix B**) concluded that approximately 620 (8 percent) of the total number of vehicles projected to cross the bridge in the AM peak hours in 2017 would divert from the Tappan Zee Bridge. Roughly 4 percent of these vehicles would be trucks. This is a worst case assumption, as it does not take into account diversions to other modes (transit and/or car pool), to other time periods, and trip avoidances that are also possible. Even with the conservative assumptions, the only crossing receiving over 100 vehicles per hour (vph) would be the approximately 380 vph that would divert to the George Washington Bridge (GWB). Considering the overall volumes on the GWB and the myriad of approaches to that crossing, the impacts on any one approach or overall bridge operations are projected to be minimal. As noted, the diversion of some of the drivers to other modes or time periods alone would further reduce the projected diversion estimates. Also, rather than diverting to other crossings, some travelers faced with the potential toll adjustment could choose to continue using the Tappan Zee Bridge and take advantage of the carpool discount (for cars with 3 or more occupants), which is 10 percent of the cash toll for cars, or currently \$0.50 based on the \$5.00 cash toll for cars. The diversion analysis also estimates that overall total vehicle miles of travel (VMT) would decrease slightly for the New York Metropolitan Area (by approximately 12,000 VMT, or 0.06 percent); New York County would experience the largest increase in daily VMT (approximately 0.2 percent) due to the potential toll adjustment. This change is consistent with the projected minor shift in trans-Hudson traffic from the Tappan Zee Bridge to the GWB and is considered to be very small. Given that the diversions are projected to be minimal, it is not expected that the potential toll adjustments would result in

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<sup>5</sup> Uses based on 2011 Tax Bills from the Town of Clarkstown, Receiver of Taxes.

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disproportionately high and adverse effects on minority populations as a result of diversions through minority communities. Similarly, since the projected diversions would be minimal, it is anticipated that the toll increase would result in minimal shifts in transit ridership, which would not be expected to result in any disproportionate adverse effects on minority populations.<sup>6</sup>

**19-4-2 LOW-INCOME STATUS ANALYSIS**

**19-4-2-1 OPERATIONAL STUDY AREA**

Data on poverty level was collected for the 2010 Census block groups in the study area to determine whether any low-income areas are present in the study area. As shown in **Table 19-3**, none of the study area’s block groups have low-income populations that exceed the percentage of the overall population that is below poverty level in Rockland County (11.3 percent) or Westchester County (8.2 percent). Rather, the study area’s 11 block groups have low-income population percentages ranging from approximately 1 to 6 percent in Westchester County and approximately 2 to 9 percent in Rockland County. The study area as a whole has a low-income population of approximately 4 percent of the total study area population. Therefore, none of the study area's block groups are considered potential environmental justice areas based on the income characteristics.

**Table 19-3  
Operational Study Area Low-Income Status**

2010 Census Block Groups	ACS 2006-2010
	Individuals Below Poverty Level (%)*
<b>Westchester County Block Groups</b>	
Tract 114, BG 1	3.2
Tract 114, BG 2	1.2
Tract 114, BG 3	4.9
Tract 114, BG 4	1.4
Tract 114, BG 5	5.4
Tract 115, BG 2	5.8
Tract 115, BG 3	1.5
<b>Rockland County Block Groups</b>	
Tract 130.03, BG 2	5.4
Tract 132, BG 1	4.5
Tract 132, BG 2	9.0
Tract 132, BG 3	1.8
<b>Study Area</b>	<b>3.6</b>
<b>Rockland County</b>	<b>11.3</b>
<b>Westchester County</b>	<b>8.2</b>
<b>Notes:</b>	
** Percent of individuals with incomes below poverty level, as established by the U.S. Census Bureau.	
<b>Sources:</b> U.S. Census Bureau, 2006-2010 American Community Survey.	

<sup>6</sup> Therefore, while minority communities in the study area were identified and mapped (see Figure 19-4), this analysis of environmental justice effects of toll adjustments does not specifically consider the race and ethnic composition of the study area population.



19-4-2-2 CONSTRUCTION STUDY AREA

In terms of low-income areas, of the 16 2010 Census block groups located in the construction study area for environmental justice, none were identified as a low-income area according to the applicable federal guidance on environmental justice (see **Table 19-4** and **Figure 19-5**). The block groups in the construction study area have low-income population percentages ranging from approximately 1 to 6 percent in Westchester County and approximately 1 to 10 percent in Rockland County—lower than the corresponding poverty thresholds in each county (8 percent in Westchester County and 11 percent in Rockland County).

**Table 19-4**  
**Construction Study Area Low-Income Status**

2010 Census Block Groups	ACS 2006-2010
	Individuals Below Poverty Level (%)*
<b>Westchester County Block Groups</b>	
Tract 114, BG 1***	<u>3.2</u>
Tract 114, BG 2***	<u>1.2</u>
Tract 114, BG 3***	<u>4.9</u>
Tract 114, BG 4***	<u>1.4</u>
Tract 114, BG 5***	<u>5.4</u>
Tract 115, BG 2***	<u>5.8</u>
Tract 115, BG 32***	<u>1.5</u>
<b>Rockland County Block Groups</b>	
Tract 111.02, BG 1	<u>0.7</u>
Tract 111.02, BG 2	<u>7.7</u>
Tract 111.02, BG 3	<u>5.0</u>
Tract 112, BG 2	<u>4.8</u>
Tract 130.03, BG 2***	<u>5.4</u>
Tract 131, BG 1**	<u>9.7</u>
Tract 132, BG 1***	<u>4.5</u>
Tract 132, BG 2***	<u>9.0</u>
Tract 132, BG 3***	<u>1.8</u>
<b>Study Area</b>	<u>4.4</u>
<b>Rockland County</b>	<u>11.3</u>
<b>Westchester County</b>	<u>8.2</u>
<b>Notes:</b>	
<b><i>Bold italic</i></b> denotes potential environmental justice area.	
*Percent of individuals with incomes below poverty level, as established by the U.S. Census Bureau.	
***These block groups are also located in the operational study area for poverty status.	
<b>Sources:</b> U.S. Census Bureau, 2006-2010 American Community Survey.	

19-4-2-3 TOLL ADJUSTMENTS STUDY AREA

As shown in Table 19-5 and Figure 19-5, the toll adjustments study area includes 343 block groups that have been identified as low-income communities in all of Westchester (216 Block Groups), Rockland (52 Block Groups), and Orange Counties (75 Block Groups). As shown on Figure 19-5, these locations are present throughout the toll adjustment study area, with notable clustering of communities in southern Westchester County as well as in urban and rural locations throughout the study area. The majority of the toll adjustments study area is not low-income.

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**Table 19-5**

**Toll Adjustment Study Area Low-Income Status**

Census Block Groups	Individuals Below Poverty Level (%)*	Census Block Groups	Individuals Below Poverty Level (%)*	Census Block Groups	Individuals Below Poverty Level (%)*	Census Block Groups	Individuals Below Poverty Level (%)*
<b>Westchester County Low-Income Block Groups at or Greater than County-wide Average of 8.2 Percent</b>							
Tract 1.01, BG 1	20.5	Tract 18, BG 1	10.3	Tract 59.01, BG 1	20.8	Tract 93, BG 3	19.2
Tract 1.01, BG 2	37	Tract 19, BG 1	8.8	Tract 59.01, BG 2	13.1	Tract 94, BG 2	27.3
Tract 1.03, BG 2	41.1	Tract 20, BG 4	13.3	Tract 59.01, BG 3	22.3	Tract 94, BG 3	17.8
Tract 1.03, BG 3	26.4	Tract 21.07, BG 1	15.5	Tract 60, BG 1	31.6	Tract 95, BG 3	8.3
Tract 2.01, BG 1	19.3	Tract 22.01, BG 1	21.2	Tract 61, BG 1	26.7	Tract 103, BG 3	9.3
Tract 2.01, BG 2	29.7	Tract 22.01, BG 2	11.1	Tract 61, BG 2	30.8	Tract 104, BG 1	17.6
Tract 2.01, BG 3	24.8	Tract 22.02, BG 2	9.2	Tract 62, BG 3	19.7	Tract 107.02, BG 4	16.7
Tract 2.01, BG 4	27	Tract 22.03, BG 2	13.6	Tract 62, BG 4	22.3	Tract 112, BG 1	11.2
Tract 2.02, BG 1	26.1	Tract 22.04, BG 2	13.1	Tract 63, BG 2	23.9	Tract 115, BG 1	17.8
Tract 2.02, BG 3	8.5	Tract 24.02, BG 2	12.6	Tract 63, BG 3	16.2	Tract 116, BG 1	23.5
Tract 2.03, BG 1	19.4	Tract 26, BG 1	27.2	Tract 63, BG 4	13.2	Tract 116, BG 2	15.9
Tract 3, BG 1	27.8	Tract 26, BG 2	17.6	Tract 63, BG 5	10.5	Tract 116, BG 4	13.5
Tract 3, BG 3	22.1	Tract 26, BG 3	13.5	Tract 64, BG 1	20.4	Tract 117, BG 2	12.6
Tract 4.01, BG 1	38.8	Tract 27, BG 1	9.6	Tract 64, BG 2	26.4	Tract 119.02, BG 1	10.5
Tract 4.01, BG 2	38.4	Tract 27, BG 2	15.4	Tract 64, BG 3	9.1	Tract 123.01, BG 1	12.1
Tract 4.01, BG 4	25.3	Tract 28, BG 1	16.3	Tract 64, BG 4	29.3	Tract 123.03, BG 3	19.8
Tract 4.02, BG 1	27.7	Tract 28, BG 2	20.4	Tract 65, BG 1	19.6	Tract 128.02, BG 2	15
Tract 4.02, BG 2	34	Tract 29, BG 1	24.4	Tract 65, BG 3	9.6	Tract 129, BG 3	15.2
Tract 4.02, BG 4	14.5	Tract 29, BG 2	12.7	Tract 65, BG 4	11	Tract 130, BG 4	11.1
Tract 5, BG 1	39.4	Tract 30, BG 2	12.4	Tract 66, BG 2	10.4	Tract 132.02, BG 1	11.8
Tract 5, BG 2	40.4	Tract 31, BG 1	21.5	Tract 66, BG 3	29.4	Tract 133.01, BG 1	41.6
Tract 6, BG 1	28.8	Tract 31, BG 2	22.8	Tract 67, BG 1	9.8	Tract 133.01, BG 2	30.7
Tract 6, BG 2	24.6	Tract 32, BG 1	44.5	Tract 67, BG 4	9.6	Tract 133.04, BG 2	10
Tract 6, BG 3	27.3	Tract 32, BG 2	17.4	Tract 70, BG 1	16.5	Tract 133.04, BG 3	8.8
Tract 6, BG 4	23.2	Tract 33, BG 1	18.8	Tract 70, BG 2	10.8	Tract 134, BG 2	15.9
Tract 7.1, BG 2	10.2	Tract 33, BG 4	17.4	Tract 72, BG 1	10	Tract 134, BG 3	24.3
Tract 8.01, BG 3	18.2	Tract 34, BG 1	9.6	Tract 73, BG 1	20	Tract 134, BG 5	14.4
Tract 8.01, BG 4	21	Tract 34, BG 2	29.8	Tract 78, BG 1	23	Tract 134, BG 1	39.2
Tract 8.01, BG 5	16.3	Tract 34, BG 3	17.5	Tract 78, BG 3	26	Tract 136, BG 3	11.3
Tract 8.03, BG 1	10.3	Tract 34, BG 4	10.9	Tract 79, BG 1	25.6	Tract 137, BG 3	8.3
Tract 9, BG 2	19.8	Tract 35, BG 1	43.6	Tract 79, BG 3	35.7	Tract 138, BG 2	15.2
Tract 10, BG 1	24.9	Tract 35, BG 2	25.4	Tract 79, BG 4	9	Tract 139, BG 2	13
Tract 10, BG 2	44.5	Tract 36, BG 1	12.2	Tract 80, BG 1	28.5	Tract 141, BG 1	31
Tract 11.01, BG 1	32.9	Tract 36, BG 2	15	Tract 80, BG 2	33.1	Tract 141, BG 4	23.3
Tract 11.01, BG 2	49.7	Tract 36, BG 3	21.4	Tract 80, BG 3	21.1	Tract 142, BG 1	23.3
Tract 11.02, BG 1	18.5	Tract 37, BG 2	32.3	Tract 81, BG 2	29.6	Tract 142, BG 2	11.4
Tract 11.02, BG 2	35.1	Tract 38, BG 2	10.3	Tract 81, BG 4	15	Tract 142, BG 3	12.9
Tract 11.02, BG 3	39.6	Tract 40, BG 1	10.1	Tract 82, BG 2	17.7	Tract 143, BG 1	23.4
Tract 12, BG 1	28.6	Tract 40, BG 2	15.4	Tract 82, BG 4	15.1	Tract 143, BG 2	33.5
Tract 12, BG 3	12.9	Tract 41, BG 1	10.8	Tract 83.02, BG 1	13.8	Tract 143, BG 3	23.3
Tract 13.01, BG 3	13.2	Tract 41, BG 2	8.3	Tract 84.04, BG 1	18.3	Tract 144, BG 2	13
Tract 13.02, BG 1	43.3	Tract 42, BG 3	13.2	Tract 84.04, BG 3	13.8	Tract 144, BG 3	8.3
Tract 13.02, BG 3	10.7	Tract 43, BG 2	13.7	Tract 88, BG 1	9.1	Tract 145, BG 2	19.8
Tract 13.03, BG 1	39	Tract 45, BG 1	16.4	Tract 89.01, BG 2	17.5	Tract 145, BG 3	32.9
Tract 13.03, BG 2	20.7	Tract 48, BG 4	8.4	Tract 89.01, BG 4	21.1	Tract 146.04, BG 1	9.6
Tract 13.03, BG 4	27.6	Tract 48, BG 5	15.4	Tract 89.01, BG 5	8.6	Tract 146.04, BG 2	19.8
Tract 14.01, BG 2	18.4	Tract 49, BG 1	11.1	Tract 89.02, BG 3	15.4	Tract 146.05, BG 1	14.4
Tract 14.02, BG 2	9.1	Tract 51, BG 4	14.1	Tract 90, BG 2	20.9	Tract 147.01, BG 1	8.9
Tract 15.02, BG 2	22.8	Tract 52, BG 2	8.7	Tract 91, BG 1	16.5	Tract 147.03, BG 1	8.5
Tract 15.02, BG 3	25.1	Tract 57.01, BG 1	11.5	Tract 91, BG 3	16.4	Tract 147.04, BG 1	10
Tract 15.03, BG 1	8.4	Tract 57.01, BG 2	8.4	Tract 92, BG 1	11.8	Tract 148.10, BG 2	9.6
Tract 15.03, BG 2	11.6	Tract 57.02, BG 1	13.6	Tract 92, BG 4	11	Tract 9810, BG 1	70.8
Tract 15.05, BG 1	13.1	Tract 57.02, BG 2	13.3	Tract 92, BG 5	29.3	Tract 9830, BG 1	79.6
Tract 17, BG 4	8.4	Tract 58, BG 2	15.5	Tract 93, BG 2	37.3	Tract 9840, BG 1	21.1

**Table 19-5 (cont'd)**  
**Toll Adjustment Study Area Low-Income Status**

Census Block Groups	Individuals Below Poverty Level (%)*	Census Block Groups	Individuals Below Poverty Level (%)*	Census Block Groups	Individuals Below Poverty Level (%)*	Census Block Groups	Individuals Below Poverty Level (%)*
<b>Rockland County Low-Income Block Groups at or Greater than County-wide Average of 11.3 Percent</b>							
Tract 105.02, BG 3	17.9	Tract 115.04, BG 3	15.4	Tract 121.03, BG 2	36.2	Tract 123, BG 1	47.5
Tract 105.02, BG 4	54.9	Tract 115.05, BG 1	61.6	Tract 121.03, BG 3	17.3	Tract 123, BG 2	33
Tract 105.02, BG 5	14.5	Tract 115.05, BG 2	50.6	Tract 121.05, BG 1	56.9	Tract 123, BG 3	25.8
Tract 106.02, BG 4	13.4	Tract 115.06, BG 1	29.8	Tract 121.05, BG 2	65.9	Tract 124.01, BG 1	15.3
Tract 107.01, BG 1	34.4	Tract 115.06, BG 2	75.3	Tract 121.06, BG 1	14.2	Tract 124.01, BG 3	15.7
Tract 107.02, BG 1	20.8	Tract 116.02, BG 1	20.1	Tract 121.06, BG 2	46.2	Tract 124.02, BG 2	19.5
Tract 107.02, BG 3	21	Tract 119.01, BG 1	26.9	Tract 122.02, BG 1	23.9	Tract 124.02, BG 3	22
Tract 107.03, BG 1	30.4	Tract 121.01, BG 1	30.9	Tract 122.02, BG 2	13.3	Tract 125.01, BG 1	18.8
Tract 107.03, BG 2	15.6	Tract 121.01, BG 3	24.7	Tract 122.02, BG 3	13.3	Tract 125.02, BG 3	17.2
Tract 108.02, BG 1	17	Tract 121.02, BG 1	66.9	Tract 122.03, BG 1	15.4	Tract 130.01, BG 2	69.8
Tract 113.01, BG 2	17	Tract 121.02, BG 2	53.5	Tract 122.03, BG 2	33.3	Tract 130.02, BG 3	32.2
Tract 113.01, BG 3	13.5	Tract 121.02, BG 3	68.1	Tract 122.04, BG 1	25.1	Tract 130.03, BG 1	25.2
Tract 113.01, BG 4	27.6	Tract 121.03, BG 1	42.9	Tract 122.04, BG 2	35.6	Tract 131, BG 4	18.1
<b>Orange County Low-Income Block Groups at or Greater than County-wide Average of 11.1 Percent</b>							
Tract 1, BG 2	15.3	Tract 6, BG 3	17	Tract 112, BG 1	19.3	Tract 148, BG 5	11.5
Tract 1, BG 3	20.8	Tract 11, BG 1	22.5	Tract 112, BG 3	19.8	Tract 150.03, BG 1	77
Tract 3, BG 1	26.9	Tract 11, BG 2	24.7	Tract 113, BG 3	12.2	Tract 150.03, BG 2	48.6
Tract 3, BG 2	14.1	Tract 11, BG 4	25.8	Tract 113, BG 4	17	Tract 150.04, BG 1	24.4
Tract 3, BG 3	15.5	Tract 12, BG 2	23.3	Tract 116.01, BG 3	25.3	Tract 150.04, BG 2	80.2
Tract 3, BG 4	60.3	Tract 13, BG 2	13.6	Tract 116.02, BG 3	15.1	Tract 150.04, BG 3	50.6
Tract 3, BG 5	26.6	Tract 15, BG 1	22.3	Tract 119, BG 4	31.6	Tract 150.05, BG 1	47.4
Tract 4, BG 1	17.5	Tract 15, BG 3	34.4	Tract 121, BG 2	22	Tract 150.05, BG 2	68.7
Tract 4, BG 2	49.1	Tract 16, BG 1	18.1	Tract 126.02, BG 1	16.5	Tract 150.06, BG 1	62.1
Tract 4, BG 3	35.7	Tract 16, BG 3	12.8	Tract 127, BG 1	17.6	Tract 150.06, BG 2	70.5
Tract 4, BG 4	27	Tract 21, BG 3	18.5	Tract 127, BG 4	12.3	Tract 151, BG 1	39.7
Tract 4, BG 5	37.8	Tract 22, BG 1	25.1	Tract 129, BG 1	18.4	Tract 151, BG 2	29.8
Tract 5.01, BG 1	27.3	Tract 22, BG 3	33.6	Tract 133, BG 2	23.1	Tract 151, BG 4	30.3
Tract 5.01, BG 2	21.5	Tract 101.02, BG 4	20.7	Tract 137, BG 1	13.9	Tract 151, BG 5	43.3
Tract 5.01, BG 3	13.9	Tract 105, BG 2	18.9	Tract 137, BG 2	11.8	Tract 151, BG 6	26.7
Tract 5.02, BG 1	39.7	Tract 105, BG 5	15.9	Tract 141.01, BG 1	20	Tract 152, BG 1	12.7
Tract 5.02, BG 2	36.2	Tract 106, BG 5	11.2	Tract 141.01, BG 2	35.7	Tract 152, BG 4	13.2
Tract 5.02, BG 3	48.7	Tract 107, BG 5	15.1	Tract 143.01, BG 2	18		
Tract 5.02, BG 4	35	Tract 108.02, BG 2	27.1	Tract 145.01, BG 2	21.8		
Tract 6, BG 2	18.5	Tract 110, BG 4	11.6	Tract 148, BG 4	12.3		

**Notes:** \*Percent of individuals with incomes below poverty level, as established by the U.S. Census Bureau.  
**Sources:** U.S. Census Bureau, 2006-2010 American Community Survey.

## 19-5 ENVIRONMENTAL EFFECTS

### 19-5-1 SUMMARY OF ADVERSE EFFECTS

As discussed throughout this Final EIS, the Replacement Bridge Alternative would result in certain adverse impacts. Those impacts are described below. An analysis of the project’s potential for disproportionately high and adverse impacts on environmental justice populations is provided in the next section.

- **Visual and Aesthetic Resources.** The Replacement Bridge Alternative would adversely impact views from a limited number of residences on Ferris Lane, Bight Lane, and River Road.
- **Historic and Cultural Resources.** The existing Tappan Zee Bridge would be removed and replaced as a result of this project. This would constitute an adverse effect on a historic resource. Proposed measures to mitigate the adverse effect of the project on the Tappan Zee Bridge are specified in a Section 106 Memorandum of Agreement (MOA) for this project, included as **Appendix C** of this document, and are discussed in Chapter 10, “Historic and Cultural Resources.”

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- **Noise and Vibration.** The Replacement Bridge Alternative would exceed the FHWA Noise Abatement Criteria (NAC) resulting in noise impacts at up to 295 receptors in Rockland County and 101 receptors in Westchester County. The majority of these impacts would be attributed to increases in traffic independent of the Replacement Bridge Alternative. As addressed in Chapter 12, “Noise and Vibration,” noise impacts would be mitigated through the use of noise walls pursuant to federal regulations and state policy.
- **Construction Impacts.** Potential construction impacts related to traffic, air quality, noise, water quality, and ecology would occur along the right-of-way. Construction activities would incorporate measures to minimize these impacts to the extent feasible (see Chapter 18, “Construction Impacts”).
- **Toll Adjustments Effects.** While toll adjustment is not expected to have an adverse effect on the general population in the affected region (as described in Chapter 4: “Transportation” and Chapter 8: “Socioeconomic Conditions”), payment of the new highway toll would require a higher proportion of income for lower-income drivers than for higher-income drivers. Therefore, this chapter analyzes the effects of toll adjustments on low-income populations compared to the general population.

### 19-5-2 ANALYSIS OF THE POTENTIAL FOR DISPROPORTIONATELY HIGH AND ADVERSE EFFECTS

The FHWA environmental justice guidance document states that when determining whether an action would have a disproportionately high and adverse effect on minority and low-income populations, mitigation measures for any potential adverse effects from the project and potential offsetting benefits to the affected minority and low-income populations should be taken into account. The project would maintain a vital link in the regional and national transportation network by providing an improved Hudson River crossing between Rockland and Westchester Counties. While safe to the traveling public, the bridge does not meet current standards for its design or traffic operations. The project would correct structural, operational, mobility, safety, and security features of the existing Tappan Zee Bridge, including providing for trans-Hudson access for cyclists and pedestrians and study area residents. The project would result in improvements in transportation mobility and safety and would not affect existing bus service nor would it preclude transit operations.

In addition, the Replacement Bridge Alternative would include a shared-use path for pedestrians and bicyclists to cross the Hudson River. This shared-use path would increase the public’s access to trail systems and bicycle routes on both sides of the Hudson River. The addition of the shared-use path would also benefit area residents with no access to a car or other vehicle transport.

#### 19-5-2-1 OPERATIONAL AND CONSTRUCTION EFFECTS

The Replacement Bridge Alternative would not result in any disproportionately high and adverse impacts on environmental justice populations.

The project’s potential impacts on historic resources would occur mainly in a non-minority area and would not constitute a disproportionately high or adverse impact on environmental justice populations. The expected visual impacts would also occur in

non-minority and non-low-income areas such that no disproportionately high or adverse impacts on environmental justice populations would occur from the project's visual effects.

The expected noise impacts as a result of the project would occur on either side of Interstate 87/287 in both minority and non-minority areas, in close proximity to the area of the proposed bridge realignment. In Rockland County, noise impacts would occur in CT 132 Block Groups 2 and 3, which are minority areas, in addition to in non-minority areas (CT 130.03 BG 2 and CT 132 BG 1). In Westchester County, noise impacts would occur in both minority (CT 115 BG 2) and non-minority (CT 114 Block Groups 1 and 3) areas. Where feasible and reasonable, noise impacts would be mitigated through the use of noise walls. Unmitigated noise impacts would primarily occur in non-minority areas of Rockland County (CT 132 BG 1 and CT 130.03 BG 2 in both the Short and Long Span Options). In Westchester County, unmitigated noise impacts would occur in minority (CT 115 BG 2) and non-minority (CT 114 BG 1) areas in both the Short and Long Span Options.

In terms of construction-related effects, there is no alternative to construction of the Tappan Zee Hudson River crossing taking place within the Interstate 87/287 right-of-way along which both minority and non-minority areas are located. Based on a review of the likely potential impacts of the project, minority and low-income areas would not bear a disproportionately high or adverse share of construction impacts resulting from the project. Construction-related effects of the project would be borne by minority and low-income areas as well as non-minority and non-low-income areas including at the staging areas where potential construction effects would be mitigated.

#### 19-5-2-2 TOLL ADJUSTMENTS EFFECTS

To assess the potential impact of toll adjustments on the low-income communities identified in the toll adjustment study area, the first step of the analysis was to characterize the likelihood that low-income residents are regular commuters or users of the bridge. Based on estimates derived independently from both E-ZPass data and census data, the vast majority of regular commuters or users of the bridge are not low-income residents.

A review was undertaken of all E-ZPass customers who used the bridge during the month of October 2011. Of the approximately 391,000 New York State E-ZPass customers who crossed the Tappan Zee Bridge in October 2011, approximately 21,600 (about 5 percent) were determined to be commuters that utilize the Tappan Zee Bridge as part of a full or part-time daily commute (measured as an E-ZPass customer with 15 or more trips in the month). If the 21,600 of Tappan Zee Bridge commuters with E-ZPass represent 75 percent of the total number of Tappan Zee Bridge commuters (about 29,000), then these 29,000 total Tappan Zee Bridge commuters represent about 1.8 percent of the total combined population of the three county toll adjustments study area. The data also reveals that the vast majority of the commuters are commuting west to east (from Rockland and Orange Counties to Westchester County).

The E-ZPass-derived estimate of 29,000 Tappan Zee Bridge commuters is consistent with another measure of the regular commuting population, which uses CTPP data to estimate work trips that would be most likely to cross the Tappan Zee Bridge. This journey-to-work data yields an estimated commuter base of 32,840 Tappan Zee Bridge

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commuters. While the CTPP-derived estimate represents a different data source and a slightly larger data collection area, it is consistent with and validates the estimate derived from E-ZPass data.<sup>7</sup>

Based on the CTPP, an income profile of these commuters was developed, which indicates that only 1.23 percent of regular commuters on the bridge are estimated to be low-income (i.e. below poverty level). The majority of the Tappan Zee Bridge commuters in the study area had household incomes over \$150,000 (35.6 percent), followed by the \$100,000-\$149,999 range (29.8 percent), with only 0.5 percent with incomes less than \$15,000 (which is roughly the poverty level for a two-person family in accordance with the 2012 Federal Poverty Guidelines). These incomes are in line with the average household incomes for the counties in the study area and are above the average household incomes for the low-income communities in the study area (see **Table 19-6**), which supports the notion that the vast majority of commuters are not low-income. Therefore, on a regional basis, the potential toll adjustments would not be expected to be disproportionately borne by a low-income population.

**Table 19-6  
Toll Spending as Percent of Income by County**

<b>County</b>	<b>2010 Avg. HH Income County-Wide</b>	<b>2010 Avg. HH Income Low Income Areas</b>
Rockland	\$105,450	\$82,056
Orange	\$83,948	\$88,183
Westchester	\$128,127	\$66,367

**Sources:** 2006-2010 ACS 5-Year Estimates

Nonetheless, while a very small percentage of the total commuting population is low-income residents, these users would have to allocate a greater proportion of their income to pay for any potential toll adjustments. In addition to toll adjustments themselves, it is also noted that the existing and future burden on some low-income populations is accentuated if such users are not able to purchase an E-ZPass (due to set-up fees or lack of a credit card and/or bank account or language barriers), since tolls are and would be higher without the discounts offered to E-ZPass customers. The project would include the provision of offsetting benefits, including transportation improvements and E-ZPass education, such that there would not be disproportionately high and adverse effects on low-income commuting populations. For instance, as an offsetting benefit, NYSTA is committed to offering enhanced marketing efforts to expand E-ZPass use and other discount programs across minority and low-income populations. In addition, as previously noted, rather than diverting to other crossings, some travelers faced with the toll adjustment could choose to continue using the Tappan Zee Bridge but share toll expenses through car pooling, which also has an additional discount (for cars with 3 or more occupants) of 10 percent of the cash toll for cars, or currently \$0.50 based on the \$5.00 cash toll for cars.

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<sup>7</sup> Journey-to-work tables were collected for six counties surrounding the Tappan Zee Bridge —Rockland, Bergen, and Orange on the west of the Hudson River and Fairfield, Westchester, and the Bronx on the east side. All trips originating from a county on one side of the Hudson River and terminating at a county on the other side were considered for purposes of identifying the commuters, with the exception of trips between Bergen and Bronx Counties, since it was assumed that the trips originating in either of these counties and terminating in the other would traverse the Hudson River via the George Washington Bridge rather than the Tappan Zee Bridge.

Low-income commuters may also take advantage of existing bus transit services connecting Westchester, Rockland, and Orange Counties, as well as utilizing the project's dedicated bicycle and pedestrian lanes for those potential users who don't own vehicles. For example, those with Limited English skills are more likely to take public transportation or utilize their relatives for transportation until such a time as their English skills are more proficient. According to the FTA's policy guidelines, "Public transit is a key means of achieving mobility for many LEP persons. According to the 2000 Census, more than 11 percent of LEP persons aged 16 years and over reported use of public transit as their primary means of transportation to work, compared with about 4 percent of English speakers."<sup>8</sup> Public transportation pools the expense of the tolls and reduces the burdens of payment, insurance, fuel, and maintenance costs. NYSDOT will continue to interact with several local public transportation providers and also subsidizes public transportation through its Region 8 office, thus further enhancing commuter and local transit ridership opportunities.

In summary, the vast majority of regular commuters of the Tappan Zee Bridge are not low-income residents. As presented in the Final EIS, the project includes mitigation measures for the project's potential adverse impacts, as well as potential offsetting benefits such as transportation improvements and E-ZPass education. The project would provide regional transportation connectivity; an improved Hudson River crossing; structural, operational, mobility, safety, and security improvements; trans-Hudson access for cyclists and pedestrians and study area residents; and would not affect existing bus service, nor would it preclude transit operations. The addition of the shared-use path would also benefit area residents with no access to a car or other vehicle transport. Moreover, as noted above, as an offsetting benefit, NYSTA is committed to offering enhanced marketing efforts to expand E-ZPass use across minority and low-income populations, which would provide a discount on tolls.

Therefore, the project would not be expected to result in disproportionately high and adverse toll adjustments effects on environmental justice populations.

## **19-6 PUBLIC PARTICIPATION**

FHWA, the New York State Department of Transportation (NYSDOT) and NYSTA have engaged in a robust public outreach effort. The project sponsors have compiled a mailing list, comprising more than 5,000 interested individuals and organizations, which is used to distribute meeting announcements and information about the project. Included within the list are organizations, media, and individuals that have relevance and connections with environmental justice communities in the study area.

Advertisements announcing public hearings were placed in five newspapers, including two newspapers serving environmental justice communities. A public notice inviting interested members of the public to participate in the Section 106 consultation process also was published in English and Spanish in newspapers, and Spanish translation services were available at the scoping briefings (held on October 25, 2011 in

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<sup>8</sup> "Implementing the Department of Transportation's Policy Guidance Concerning Recipients' Responsibilities to Limited English Proficient (LEP) Persons: A Handbook for Public Transportation Providers" (April 2007), p 5.

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Westchester County and on October 27, 2011 in Rockland County). A project website is updated regularly to provide notification of meetings and other project-related information. In addition, the significant communities of Chinese in Westchester County and Jewish/Hasidic communities in Rockland and Orange Counties were provided specialized notice.

These meetings were held at various times and in different locations available to public transportation in order to ensure maximum access by the public-transportation riding community. The Tarrytown meeting could be accessed by the 113 or 1W bus. The Westchester County Bee Line has multiple routes that intersect at nearby Central Avenue, so many people could get to this meeting. Route 1W is also accessible from the Dobbs Ferry Station, and Route 13 is accessible from the Tarrytown Station. For the Rockland County Meeting, there are several routes that access Palisades Center, as it is a major retail thoroughfare.

The Tappan Zee Bridge Hudson River Crossing Project's public outreach program, including outreach to the affected communities of concern, will be ongoing throughout the environmental review process in accordance with applicable regulations. In addition to the opportunities for public participation to date, from publication of the Final EIS and forward towards implementation of the project, there will be additional opportunities for public input. The Final EIS will have a 30-day public review period, and, most notably, any toll adjustments are subject to approval by the NYSTA Board; in accordance with NYSTA policy and the New York State Public Authorities Law, the Board would hold one or more public hearings on its potential toll adjustments. These hearings will be widely advertised, and public comments will be considered prior to a final vote by the Board. Information on tolling adjustments and public comment process is provided on the NYSTA website (<http://www.thruway.ny.gov/news/adjustment/index.html>).

### **19-7 MITIGATION FOR DISPROPRIONATELY HIGH AND ADVERSE EFFECTS**

The Replacement Bridge Alternative would not result in any disproportionately high and adverse effects on minority and low-income populations during operation or construction.